

#### SEQUENCE LISTING

<110> Kufer Dr, Peter

<120> A novel method of identifying binding site domains that retain the capacity of binding to an epitope

<130> B 3077 PCT

<150> EP 97 12 0096.9

<151> 1997-11-17

<160> 75

<170> PatentIn Ver. 2.0

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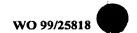
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38

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| gagga  | gacgg | tgaccgggc    |            | •          |            |            | 79 |
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| <400>  | 22    |              |            |            |            |            |    |
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32

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|        |                           |
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<400> 39

gaggttcagc tcgagcagtc tggagct

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<210> 44

<211> 32

<212> DNA

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32

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39

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cattgag 67

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<211> 42

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<210> 51

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<210> 53

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<213> Homo sapiens

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<213> Homo sapiens

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Lys Asp Met Gly Trp Gly Ser Gly Trp Arg Pro Tyr Tyr Tyr 100 105 110

Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser 115 120 125

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<211> 107

<212> PRT

<213> Homo sapiens

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 Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Gln Ser Ile Ser Ser Tyr
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Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile

35 40 45

Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
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Glu Asp Ser Ala Thr Tyr Cys Gln Gln Ser Tyr Asp Ile Pro Tyr

85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 57

<211> 201

<212> DNA

<213> Artificial Sequence

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<223> synthetic oligonucleotide

<400> 57

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acaggtgtcc actccgacta caaagatgat gacgataagg atatctccgg aggtggtggt 120
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<211> 525

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<213> M13-Phage and artificial sequence of the MCS

<220>

<223> DNA-sequence of the N2-domain and the MCS

<400> 58

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cetaateett etettgagga gteteageet ettaataett teatgettea gaataatagg 180
tteegaaata ggeagggge attaaetgtt tataegggea etgttaetea aggeacetgae 240
ceegttaaaa ettataeea gtaeaeteet gtateateaa aageeatgta tgaegettae 300
tggaaeggta aatteagaga etgegette eattetgget ttaatgagga teeatteegtt 360
tgtgaatate aaggeeaate gtetgaeetg eeteaaeete etgteaatge tteeggaggt 420
ggtggateeg aggtgeaget getegageee ggteaeegge actagt teeteagtg 480
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<210> 59

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<212> PRT

<213> Artificial Sequence

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<223> protein sequence M13 protein III and N2-domain

<400> 59

Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile Pro Gly Tyr Thr Tyr

1 5 10 15

Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly Thr Glu Gln Asn Pro

20 25 30

Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln Pro Leu Asn Thr Phe

35 40 45

Met Phe Gln Asn Asn Arg Phe Arg Asn Arg Gln Gly Ala Leu Thr Val

50 55 60

Tyr Thr Gly Thr Val Thr Gln Gly Thr Asp Pro Val Lys Thr Tyr Tyr

65 70 75 80

Gln Tyr Thr Pro Val Ser Ser Lys Ala Met Tyr Asp Ala Tyr Trp Asn

90 95

Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly Phe Asn Glu Asp Pro

100 105 110

Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp Leu Pro Gln Pro Pro

115 120 125

Val Asn Ala Ser Gly Gly Gly Ser

130 135

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cttcttatct actctggatc cactttgcaa tctggaattc catcaaggtt cagtggcagt 600
ggatctggta cagattcac tctcaccatc agtagcctgg agcctgaaga ttttgcaatg 660
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atcaaa

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<212> PRT

<213> Mus sp.

<400> 61

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Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp

40
45

Ile Gly Asp Leu Phe Pro Gly Ser Gly Asn Thr His Tyr Asn Glu Arg
50 55 60

Phe Arg Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala 65 70 75 80

Phe Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe
85 90 95

Cys Ala Arg Leu Arg Asn Trp Asp Glu Ala Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Ser Glu Leu Val Met Thr Gln Ser Pro Ser 130 135 140

Ser Lys Ser Ile Ser Lys Tyr Leu Ala Trp Tyr Gln Glu Lys Pro Gly
165 170 175

Lys Thr Asn Lys Leu Leu Ile Tyr Ser Gly Ser Thr Leu Gln Ser Gly
180 185 190

Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
195 200 205

Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Met Tyr Tyr Cys Gln
210 215 220

Gln His Asn Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu
225 230 235 240

Ile Lys

<210> 62

<211> 753

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<213> Mus sp.

<400> 62

gaggtgcage tgctcgagea gtctggaget gagetggtaa ggcctgggae ttcagtgaag 60 ctgtcctgca aggettctgg ctacacette acaagetatg gtttaagetg ggtgaageag 120 agaactggae agggeettga gtggattgga gaggtttate ctagaattgg taatgettae 180 tacaatgaga agttcaaggg caaggeeaca ctgactgeag acaaateete cageacageg 240 tccatggage tecgeageet gacatetgag gactetgegg tetatttetg tgcaagaegg 300 aggateetaeg gtagtaaeta egactggtae ttegatgtet ggggeeaagg gaceaeggte 360 acegteteet caggggggg tggttetgge ggeggegget eeggtggtgg tggttetgag 420

ctcgtgatga cccagactcc actctcctg cctgtcagtc ttggagatca agcctccatc 480 tcttgcagat ctagtcagag ccttgtacac agtaatggaa acacctattt acattggtac 540 ctgcagaagc caggccagtc tccaaagctc ctgatctaca aagtttccaa ccgattttct 600 ggggtcccag acaggttcag tggcagtgga tcagggacag atttcacact caagatcagc 660 agagtggagg ctgaggatct gggagtttat ttctgctctc aaagtacaca tgttccgtac 720 acgttcggag gggggaccaa gcttgagatc aaa 753

<210> 63

<211> 251

<212> PRT

<213> Mus sp.

<400> 63

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly

1 5 10 15

Thr Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser
20 25 30

Tyr Gly Leu Ser Trp Val Lys Gln Arg Thr Gly Gln Gly Leu Glu Trp

40
45

Ile Gly Glu Val Tyr Pro Arg Ile Gly Asn Ala Tyr Tyr Asn Glu Lys
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala 65 70 75 80

Ser Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe

85

90

95

Cys Ala Arg Arg Gly Ser Tyr Gly Ser Asn Tyr Asp Trp Tyr Phe Asp 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly 115 120 125

Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Leu Val Met Thr
130 135 140

Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile
145 150 155 160

Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr

165 170 175

Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile 180 185 190

Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly
195 200 205

Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala 210 215 220

Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser Thr His Val Pro Tyr
225 230 235 240

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys

245 250

<210> 64

<211> 726

<212> DNA

<213> Mus sp.

<400> 64

gaggtgcagc tgctcgagca gtctggagct gcgctggtaa ggcctgggac ttcagtgaag 60
atatcctgca aggcttctgg atacgccttc actaactact ggctaggttg ggtaaagcag 120
aggcctggac atggacttga gtggattgga gatatttacc ctggaagtgg taatactcac 180
tacaatgaga ggttcagggg caaagccaca ctgactgcag acaaatcctc gagcacagcc 240
tttatgcagc tcagtagcct gacatctgag gactctgctg tctatttctg tgcaagattg 300
aggaactggg acgagcctat ggactactgg ggccaaggga ccacggtcac cgtctcctca 360
ggtggtggtg gttctggcgg cggcgctcc ggtggtggtg gttctgagct ccagatgacc 420
cagtctccat cttatcttgc tgcatctcct ggagaaacca ttactattaa ttgcagggca 480
agtaagagca ttagcaaata tttagcctgg tatcaagaga aacctgggaa aactaataag 540
cttcttatct actctggatc cactttgcaa tctggaattc catcaaggtt cagtggcagt 600
ggatctggta cagattcac tctcaccatc agtagcctgg agcctgaaga ttttgcaatg 660
tattactgtc aacagcataa tgaatacccg tacacgttcg gagggggac caagcttgag 720
atcaaa

<210> 65

<211> 242

<212> PRT

<213> Mus sp.

<400> 65

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Ala Leu Val Arg Pro Gly 

Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn 

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp 

Ile Gly Asp Ile Tyr Pro Gly Ser Gly Asn Thr His Tyr Asn Glu Arg 

Phe Arg Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala 

Phe Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe 

Cys Ala Arg Leu Arg Asn Trp Asp Glu Pro Met Asp Tyr Trp Gly Gln 

Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly Gly 

Gly Ser Gly Gly Gly Ser Glu Leu Gln Met Thr Gln Ser Pro Ser 

Tyr Leu Ala Ala Ser Pro Gly Glu Thr Ile Thr Ile Asn Cys Arg Ala 

Lys Thr Asn Lys Leu Leu Ile Tyr Ser Gly Ser Thr Leu Gln Ser Gly

180 185 190

Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
195 200 205

Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Met Tyr Tyr Cys Gln
210 215 220

Gln His Asn Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu 225 230 235 240

Ile Lys

<210> 66

<211> 744

<212> DNA

<213> Mus sp.

<400> 66

gaggtgcagc tgctcgagca gtctggagct gagctggtaa ggcctgggac ttcagtgaag 60 atatcctgca aggcttctgg atacgccttc actaactact ggctaggttg ggttaagcag 120 aggcctggac atggacttga atgggttgga gatattttcc ctggaagtgg taatgctcac 180 tacaatgaga agttcaaggg caaagccaca ctgactgcag acaagtcctc gtacacagcc 240 tatatgcagc tcagtagctt gacatctgag gactctgctg tctatttctg tgcaagattg 300

cggaactggg acgaggctat ggactactgg ggccaaggga ccacggtcac cgtctcctca 360 ggtggtggtg gttctggcgg cggcggctcc ggtggtggtg gttctgagct cgtgatgaca 420 cagtctccat cctccctgag tgtgtcagca ggagagaagg tcactatgag ctgcaagtcc 480 agtcagagtc tgttaaacag tggaaatcaa aagaactact tggcctggta ccagcagaaa 540 ccagggcagc ctcctaaact gttgatctac ggggcatcca ctagggaatc tggggtccct 600 gatcgcttca caggcagtg atctggaaca gatttcactc tcaccatcag cagtgtgcag 660 gctgaagacc tggcagttta ttactgtcag aatgattata gttatccgta cacgttcgga 720 ggggggacca agcttgagat caaa

<210> 67

<211> 248

<212> PRT

<213> Mus sp.

<400> 67

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly

1 5 10 15

Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn
20 25 30

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp

35 40 45

Val Gly Asp Ile Phe Pro Gly Ser Gly Asn Ala His Tyr Asn Glu Lys
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Tyr Thr Ala
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe 

Cys Ala Arg Leu Arg Asn Trp Asp Glu Ala Met Asp Tyr Trp Gly Gln 

Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly 

Gly Ser Gly Gly Gly Ser Glu Leu Val Met Thr Gln Ser Pro Ser 

Ser Leu Ser Val Ser Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser 

Ser Gln Ser Leu Leu Asn Ser Gly Asn Gln Lys Asn Tyr Leu Ala Trp 

Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Gly Ala 

Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser 

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu 

Ala Val Tyr Tyr Cys Gln Asn Asp Tyr Ser Tyr Pro Tyr Thr Phe Gly 

Gly Gly Thr Lys Leu Glu Ile Lys
245

<210> 68

<211> 726

<212> DNA

<213> Mus sp.

<400> 68

agaggtgcage tgctcgagca gtctggagct gagctggtga ggcctgggc ttcagtgaag 60
atatectgca aggcttctgg atacgccttc aataactact ggctaggttg ggtaaagcag 120
aggcctggac atggacttga gtggattgga gacatttacc ctggaagtgg aaatactcac 180
tacaatgaga ggttcagggg caaagccaca ctgactgcag acaaatcctc gagcacagcc 240
tttatgcagt taagtagcet gacatctgag gactctgctg tctatttctg tgcaagattg 300
aggaactggg acgaggctat ggactactgg ggccaaggga ccacggtcac cgtctcctca 360
ggtggtggtg gttctggcgg cggcggctcc ggtggtggtg gttctgagct cgtcatgacc 420
cagtctccat cttatcttgc tgcatctcct ggagaaacca ttactataa ttgcagggca 480
agtaagagca ttagcaaata tttagcctgg tatcaagaga aacctgggaa aactaataag 540
cttcttatct actctggatc cactttgcaa tctggaattc catcaaggtt cagtggcagt 600
ggatctggta cagatttcac tctcaccatc agtagcctgg agcctgaaga ttttgcaatg 660
tattactgtc aacagcataa tgaataccg tacacgttcg gagggggac caagcttgag 720
atcaaa

<210> 69

<211> 242

<212> PRT

<213> Mus sp.

1,17

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly

1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Asn Asn

20 25 30

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp

35 40 45

Ile Gly Asp Ile Tyr Pro Gly Ser Gly Asn Thr His Tyr Asn Glu Arg

50 55 60

Phe Arg Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala

65 70 75 80

Phe Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe

90 95

Cys Ala Arg Leu Arg Asn Trp Asp Glu Ala Met Asp Tyr Trp Gly Gln

100 105 110

Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly

115 120 125

Gly Ser Gly Gly Gly Ser Glu Leu Val Met Thr Gln Ser Pro Ser

130 135 140

Tyr Leu Ala Ala Ser Pro Gly Glu Thr Ile Thr Ile Asn Cys Arg Ala

145 150 155 160

.

 Ser Lys Ser Ile Ser Lys Tyr Leu Ala Trp Tyr Gln Glu Lys Pro Gly
165 170 175

Lys Thr Asn Lys Leu Leu Ile Tyr Ser Gly Ser Thr Leu Gln Ser Gly
180 185 190

Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
195 200 205

Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Met Tyr Tyr Cys Gln
210 215 220

Gln His Asn Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu
225 230 235 240

Ile Lys

<210> 70

<211> 753

<212> DNA

<213> Mus sp.

<400> 70

gaggtgcagc tgctcgagca gtctggagct gagctggcga ggcctggggc ttcagtgaag 60 ctgtcctgca aggcttctgg ctacaccttc acaaactatg gtttaagctg ggtgaagcag 120 aggcctggac aggtccttga gtggattgga gaggtttatc ctagaattgg taatgcttac 180

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tacaatgaga agttcaaggg caaggccaca ctgactgcag acaaatcctc cagcacagcg 240
tccatggagc tccgcagcct gacctctgag gactctgcgg tctatttctg tgcaagacgg 300
ggatcctacg atactaacta cgactggtac ttcgatgtct gggggccaagg gaccacggtc 360
accgtctcct caggtggtgg tggttctggc ggcggcgct ccggtggtgg tggttctgag 420
ctcgtgatga cccagactcc actctccctg cctgtcagtc ttggagatca agcctccatc 480
tcttgcagat ctagtcagag ccttgtacac agtaatggaa acacctattt acattggtac 540
ctgcagaagc caggccagtc tccaaagctc ctgatctaca aagtttccaa ccgatttct 600
ggggtcccag acaggttcag tggcagtga tcagggacag atttcacact caagatcagc 660
agagtggagg ctgaggatct gggagtttat ttctgctctc aaagtacaca tgttccgtac 720
acgttcggag gggggaccaa gcttgagatc aaa 753

<210> 71

<211> 251

<212> PRT

<213> Mus sp.

<400> 71

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly

1 5 10 15

Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn
20 25 30

Tyr Gly Leu Ser Trp Val Lys Gln Arg Pro Gly Gln Val Leu Glu Trp

35 40 45

Ile Gly Glu Val Tyr Pro Arg Ile Gly Asn Ala Tyr Tyr Asn Glu Lys
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala

65 70 75 80

Ser Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe
85 90 95

Cys Ala Arg Arg Gly Ser Tyr Asp Thr Asn Tyr Asp Trp Tyr Phe Asp

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly
115 120 125

Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Leu Val Met Thr
130 135 140

Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile 145 150 155 160

Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr

165 170 175

Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile 180 185 190

Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly
195 200 205

Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala 210 215 220

Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser Thr His Val Pro Tyr
225 230 235 240

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
245 250

<210> 72

<211> 717

<212> DNA

<213> Mus sp.

<400> 72

gaggtgcagc tgetegagte tggaggtggc etggtgcagc etggaggate eetggaggte feetgaacte 60 teetgtgcag ceteaggatt egattttagt agatactgga tgagttgggt eeggeagget 120 eeagggaaag ggetagaatg gattggagaa attaateeag atageagtae gataaactat 180 aegeeateete tgaaggataa atteateate teeagagaca aegeeaaaaa taegetgtae 240 etgeaaatgg geaaagtgag atetgaggae aeageeettt attaetgtge aagaggagee 300 teetgeaaatgg geaaagtgag eeaagggaee aeggteaeeg teeteeteagg tggtggtggt 360 teetggegge geggeteegg tggtggtggt teetgageteg tgeteaeee gteteeaaee 420 aeeatggetg eateteeegg ggagaagate aetateaeet geagtgeeag eteaagtata 480 agtteeaatt aettgeattg gtateageag aageeaggat teeteecetaa aetettgatt 540 tataaggaeat eeaatetgge teetgaggee teetggaggee teetgggeag tgggtetggg 600 aeeteetaet eteteaaat tggeaeeatg gaggetgaag atgttgeeae ttaetaetge 660 eageagggta gtagtataee aeteaegtte ggtgetggga eeaagettga gateaaa 717

<210> 73

<211> 239

<212> PRT

<213> Mus sp.

| <400> 73 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu      | Val | Gln | Leu | Leu | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |
| 1        |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser      | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Asp | Phe | Ser | Arg | Tyr |
|          |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Trp      | Met | Ser | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Ile |
|          |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly      | Glu | Ile | Asn | Pro | Asp | Ser | Ser | Thr | Ile | Asn | Tyr | Thr | Pro | Ser | Leu |
|          | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Lys      | Asp | Lys | Phe | Ile | Ile | Ser | Arg | Asp | Asn | Ala | Lys | Asn | Thr | Leu | Tyr |
| 65       |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Leu      | Gln | Met | Gly | Lys | Val | Arg | Ser | Glu | Asp | Thr | Ala | Leu | Tyr | Tyr | Cys |
|          |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala      | Arg | Gly | Ala | Phe | Leu | Phe | Asp | Tyr | Trp | Gly | Gln | Gly | Thr | Thr | Val |
|          |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Thr      | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly |
|          |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gly      | Gly | Ser | Glu | Leu | Val | Leu | Thr | Gln | Ser | Pro | Thr | Thr | Met | Ala | Ala |
|          | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser      | Pro | Gly | Glu | Lys | Ile | Thr | Ile | Thr | Cys | Ser | Ala | Ser | Ser | Ser | Ile |
| 145      |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ser      | Ser | Asn | Tyr | Leu | His | Trp | Tyr | Gln | Gln | Lys | Pro | Gly | Phe | Ser | Pro |
|          |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Lys      | Leu | Leu | Ile | Tyr | Arg | Thr | Ser | Asn | Leu | Ala | Ser | Gly | Val | Pro | Ala |
|          |     |     | 180 | ı   |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Arg      | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Ser | Tyr | Ser | Leu | Thr | Ile | Gly |
|          |     | 195 | ı   |     |     |     | 200 | )   |     |     |     | 205 |     |     |     |
| Thr      | Met | Glu | Ala | Glu | Asp | Val | Ala | Thr | Туг | Tyr | Cys | Gln | Glr | Gly | Ser |

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210 215 ... 220

Ser Ile Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys

225 230 235

<210> 74

<211> 744

<212> DNA

<213> Mus sp.

#### <400> 74

gaggtgcagc tgctcgagca gtctggagct gagctggtaa ggcctgggac ttcagtgaag 60
atatcctgca aggcttctgg atacgccttc actaactact ggctaggttg ggtaaagcag 120
aggcctggac atggacttga gtggattgga gatattttcc ctggaagtgg taatatccac 180
tacaatgaga agttcaaggg caaagccaca ctgactgcag acaaatcttc gagcacagcc 240
tatatgcagc tcagtagcct gacatttgag gactctgctg tctatttctg tgcaagactg 300
aggaactggg acgagcctat ggactactgg ggccaaggga ccacggtcac cgtctcctca 360
ggtggtggtg gttctggcgg cggcggctcc ggtggtggtg gttctgagct cgtgatgaca 420
cagtctccat cctccctgac tgtgacagca ggagagaagg tcactatgag ctgcaagtcc 480
agtcagagtc tgttaaacag tggaaatcaa aagaactact tgacctggta ccagcagaaa 540
ccagggcagc ctcctaaact gttgatctac tgggcatcca ctagggaatc tggggtccct 600
gatcgcttca caggcagtgg atctggaac gatttcactc tcaccatcag cagtgtgcag 660
gctgaagacc tggcagtta ttactgtcag aatgattata gttatccgct cacgttcggt 720
gctgggacca agcttgagat caaa

<210> 75

<211> 248

<212> PRT

<213> Mus sp.

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly

1 5 10 15

Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn 20 25 30

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp

35 40 45

Ile Gly Asp Ile Phe Pro Gly Ser Gly Asn Ile His Tyr Asn Glu Lys
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala 65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Phe Glu Asp Ser Ala Val Tyr Phe
85 90 95

Cys Ala Arg Leu Arg Asn Trp Asp Glu Pro Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Ser Glu Leu Val Met Thr Gln Ser Pro Ser 130 135 140

Ser Leu Thr Val Thr Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser 145 150 155 160

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Ser Gln Ser Leu Leu Asn Ser Gly Asn Gln Lys Asn Tyr Leu Thr Trp

165 170 175

Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Trp Ala 180 185 190

Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser
195 200 205

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu
210 215 220

Ala Val Tyr Tyr Cys Gln Asn Asp Tyr Ser Tyr Pro Leu Thr Phe Gly
225 230 235 240

Ala Gly Thr Lys Leu Glu Ile Lys

245

<210> 76

<211> 744

<212> DNA

<213> Mus sp.

<400> 76

gaggtgcagc tgctcgagca gtctggagct gagctggtaa ggcctgggac ttcagtgaag 60 atatcctgca aggcttctgg atacgccttc actaactact ggctaggttg ggttaagcag 120 aggcctggac atggacttga atgggttgga gatattttcc ctggaagtgg taatgctcac 180 tacaatgaga agttcaaggg caaagccaca ctgactgcag acaagtcctc gtacacagcc 240

tatatgcage teagtageet gacatetgag gactetgetg tetatteteg tgeaagattg 300 eggaactggg acgagetat ggactactgg ggeeaaggga ceaeggteae egteteetea 360 ggtggtggtg gttetggegg eggeggetee ggtggtggtg gttetgaget egtgatgaea 420 eagteteeat eeteeetge tatgteagta ggacagaagg teaetatgag etgeaagtee 480 agteagagee ttttaaatag tagcaateaa aagaactatt tggeetggta eeageagaaa 540 eaagggeage eteetaaact gettatetat ggggeateea ttagagaate ttgggteeet 600 gategattea eaggaagtgg atetgggaea gaetteaete teaecateag eagtgtgaag 660 getgaagaee tggeagtta ttaetgteag eaatattata getateegta eaegttegga 720 ggggggaeea agettgagat eaaa

<210> 77

<211> 248

<212> PRT

<213> Mus sp.

<400> 77

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly

1 5 10 15

Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn
20 25 30

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp

35 40 45

Val Gly Asp Ile Phe Pro Gly Ser Gly Asn Ala His Tyr Asn Glu Lys
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Tyr Thr Ala
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe
85 90 95

Cys Ala Arg Leu Arg Asn Trp Asp Glu Ala Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Ser Glu Leu Val Met Thr Gln Ser Pro Ser
130 135 140

Ser Leu Ala Met Ser Val Gly Gln Lys Val Thr Met Ser Cys Lys Ser 145 150 155 160

Ser Gln Ser Leu Leu Asn Ser Ser Asn Gln Lys Asn Tyr Leu Ala Trp

165 170 175

Tyr Gln Gln Lys Gln Gly Gln Pro Pro Lys Leu Leu Ile Tyr Gly Ala 180 185 190

Ser Ile Arg Glu Ser Trp Val Pro Asp Arg Phe Thr Gly Ser Gly Ser
195 200 205

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Lys Ala Glu Asp Leu
210 215 220

Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Tyr Pro Tyr Thr Phe Gly

225 230 235 240

Gly Gly Thr Lys Leu Glu Ile Lys
245